

Workflow Management System

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KEY FEATURES



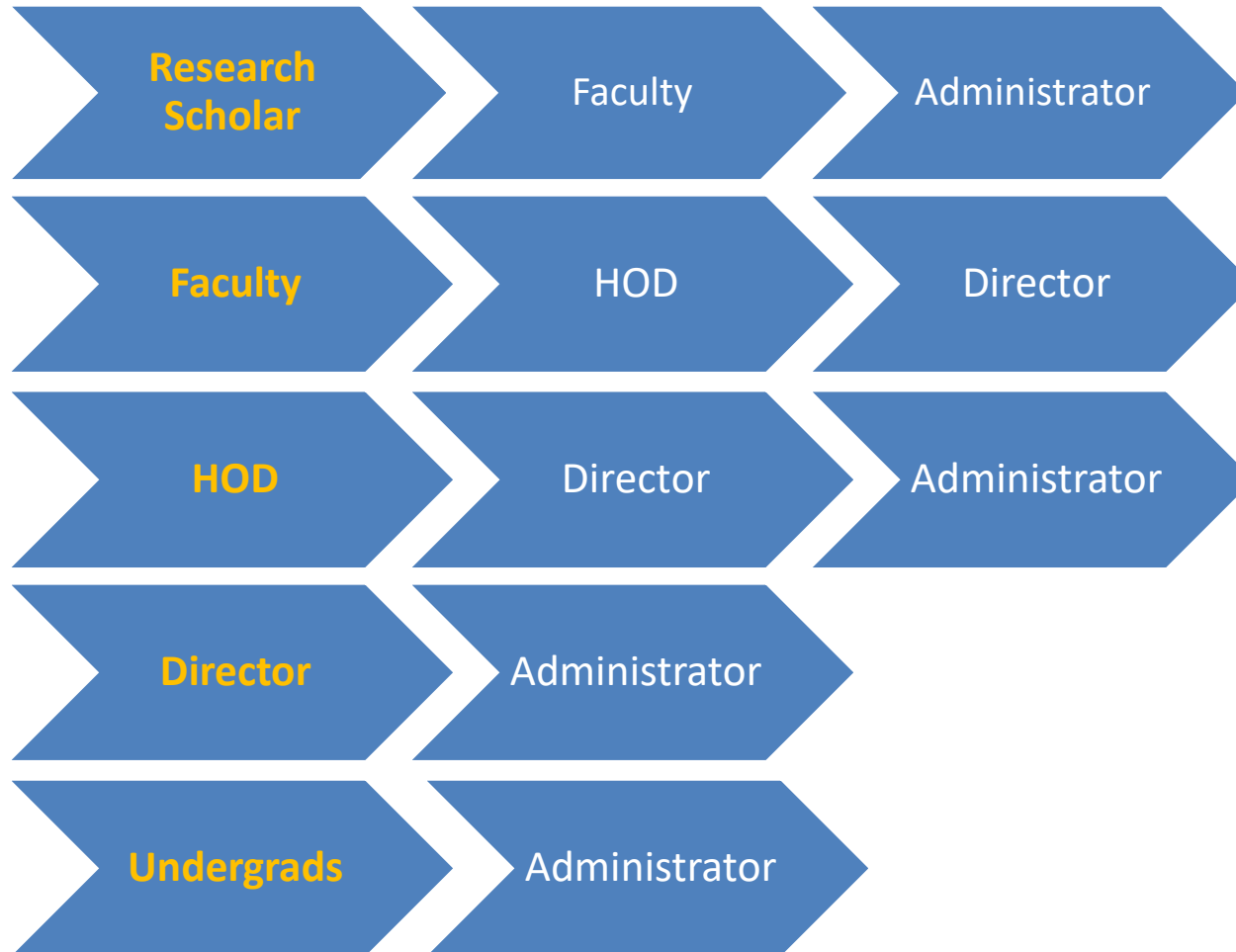


Purpose

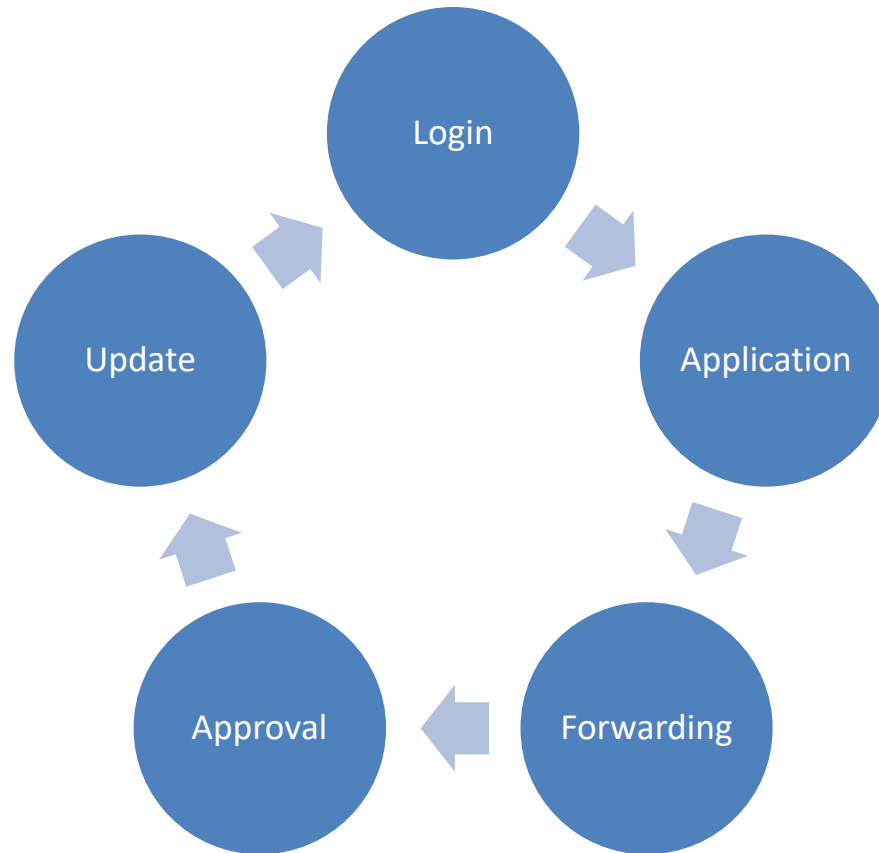
1. To create a **convenient and easy-to-use environment** for the users who are trying to apply for a leave or financial assistance.
2. To process the leave or financial assistance requests following a specific **hierarchy**.
3. To enable a user to **check the status** of his leave or financial assistance request.
4. To enable a user to **approve the requests** of those who are under him/her in the hierarchy pyramid.



Hierarchy



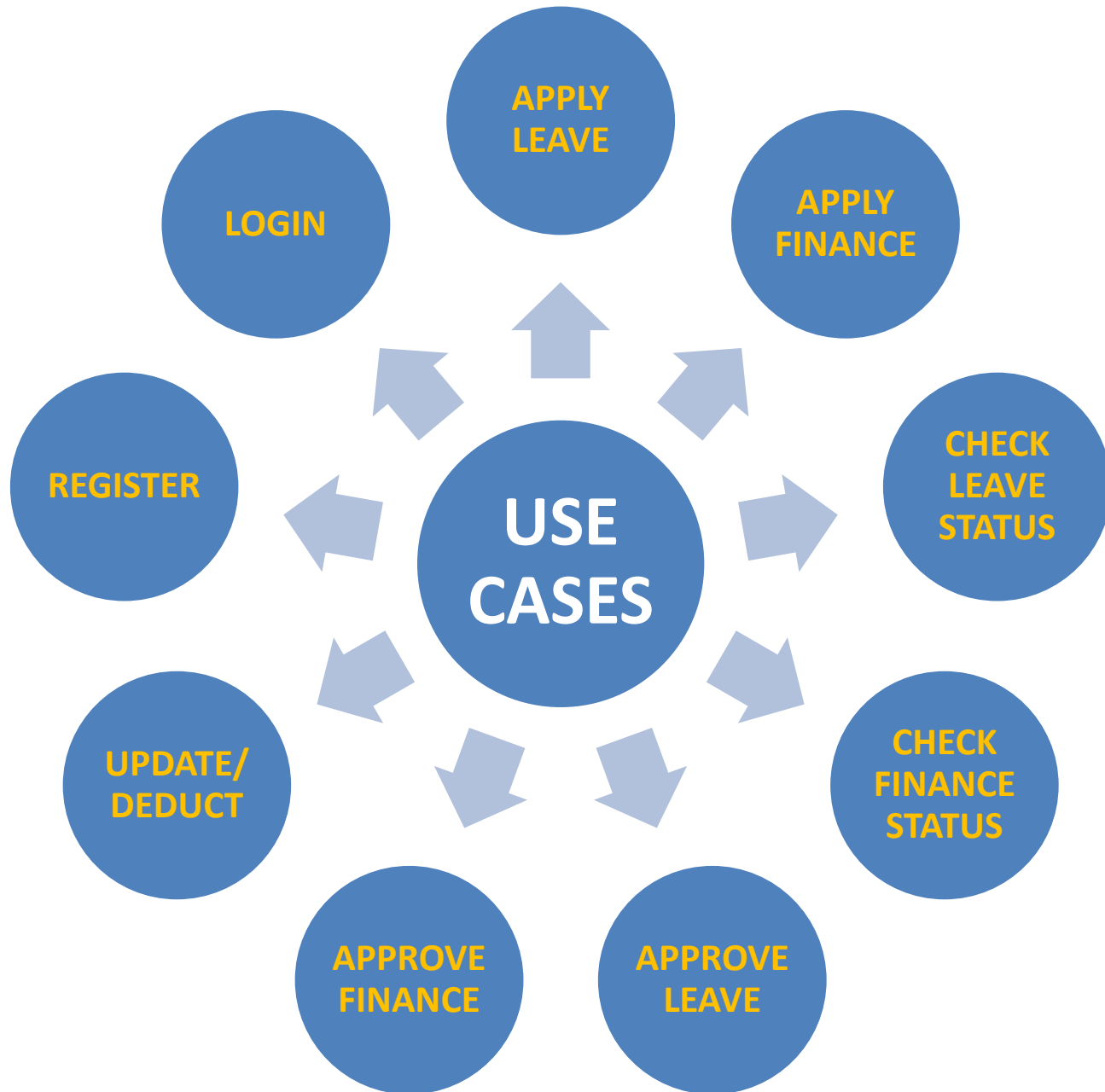
Software process cycle



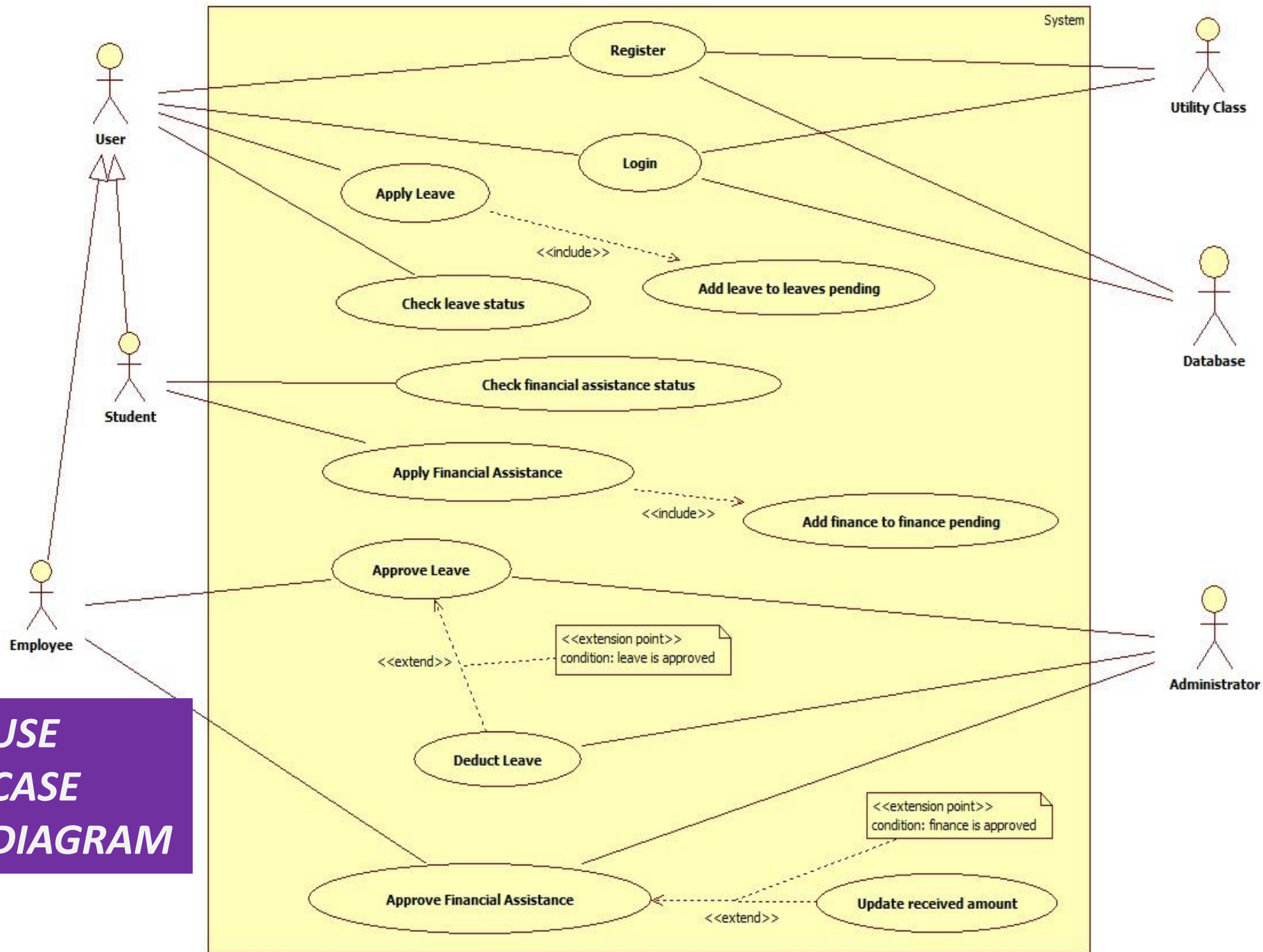


LIST OF USE CASES





USE CASE DIAGRAM

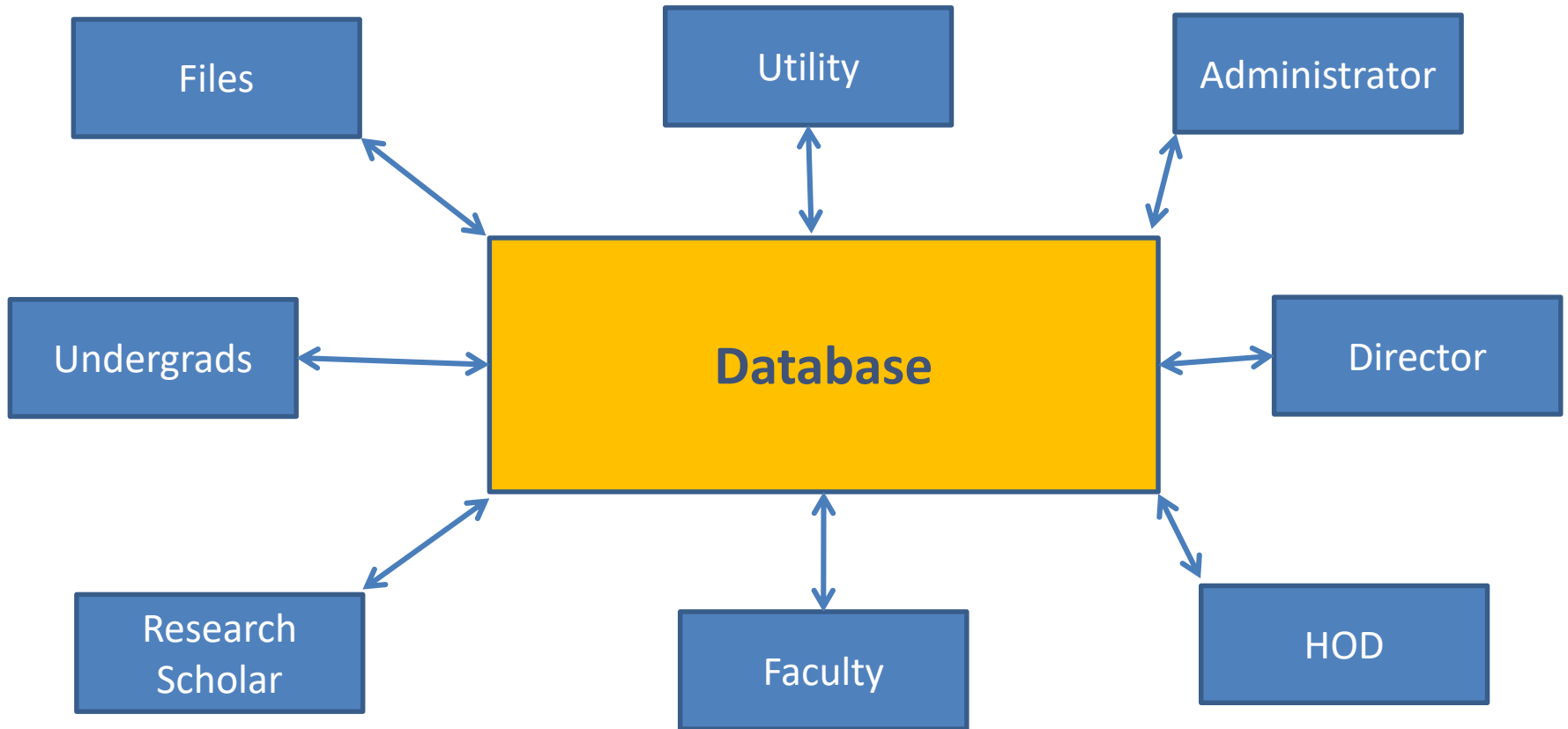




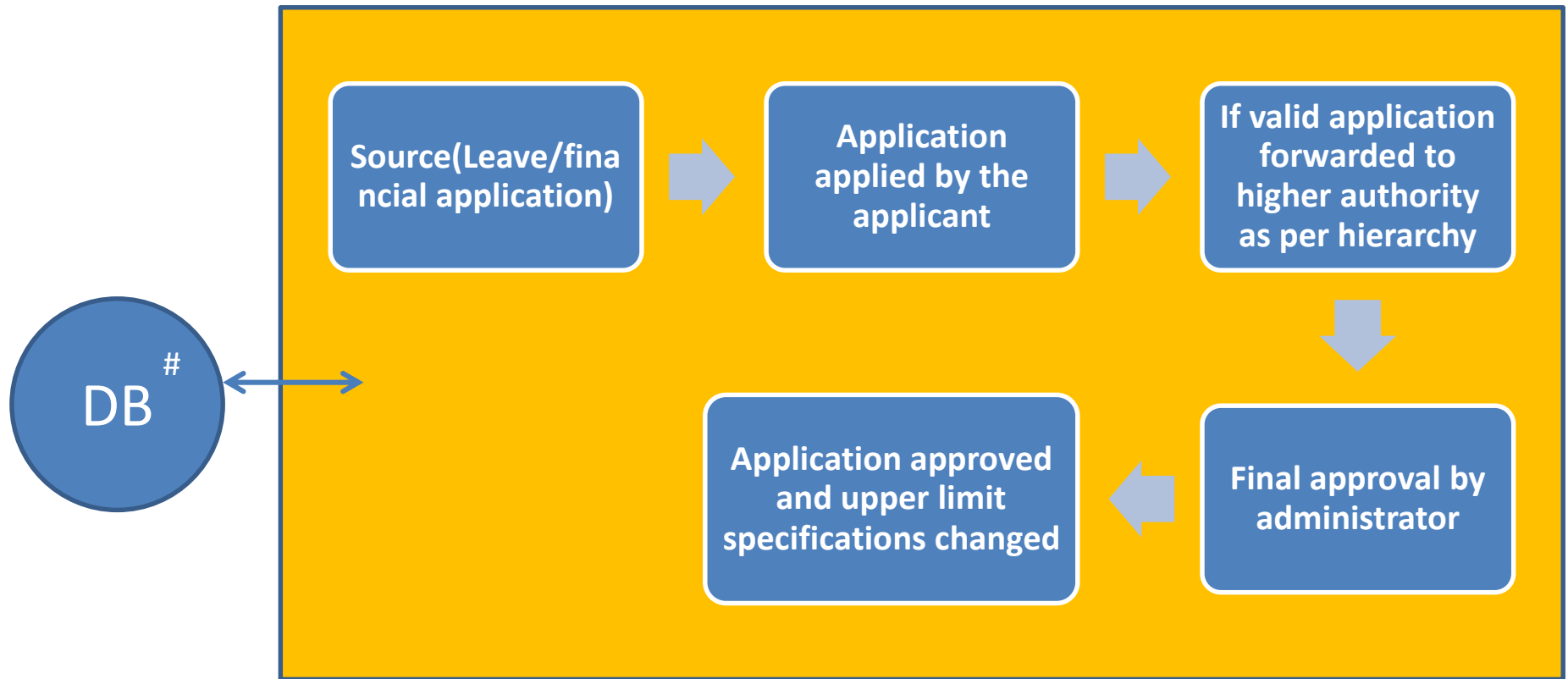
SOFTWARE ARCHITECTURE




REPOSITORY ARCHITECTURE




PIPE AND FILTER ARCHITECTURE





STRUCTURE OF DATABASE/ FILE SYSTEM



File Handling

- Preliminary file handling
- Line by line write into files from data structures before exiting program
- Line by line read into data structures from files before entering the program
- Preserves data integrity

Advantages

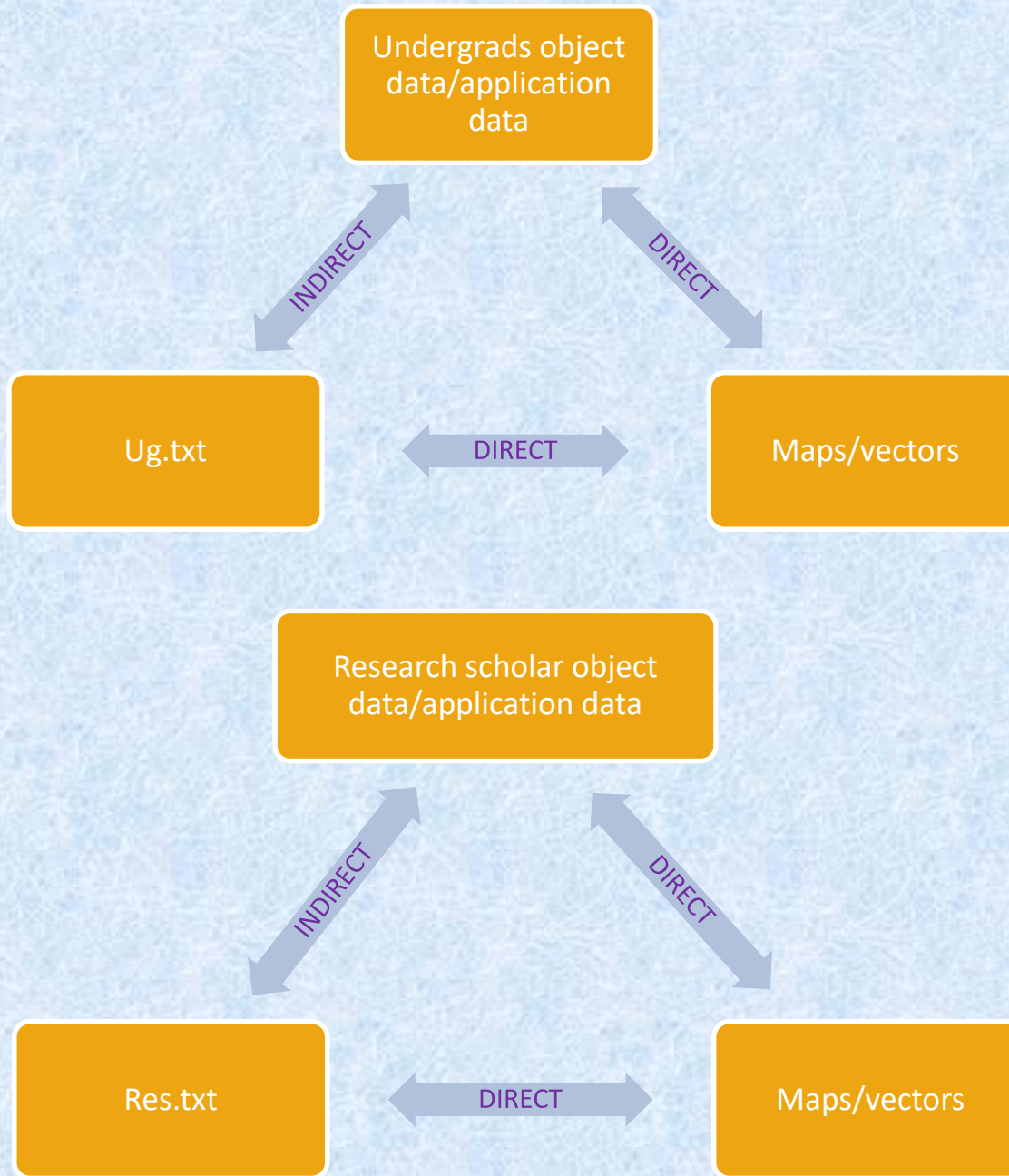
Avoids multiple file accesses during program execution reducing latency

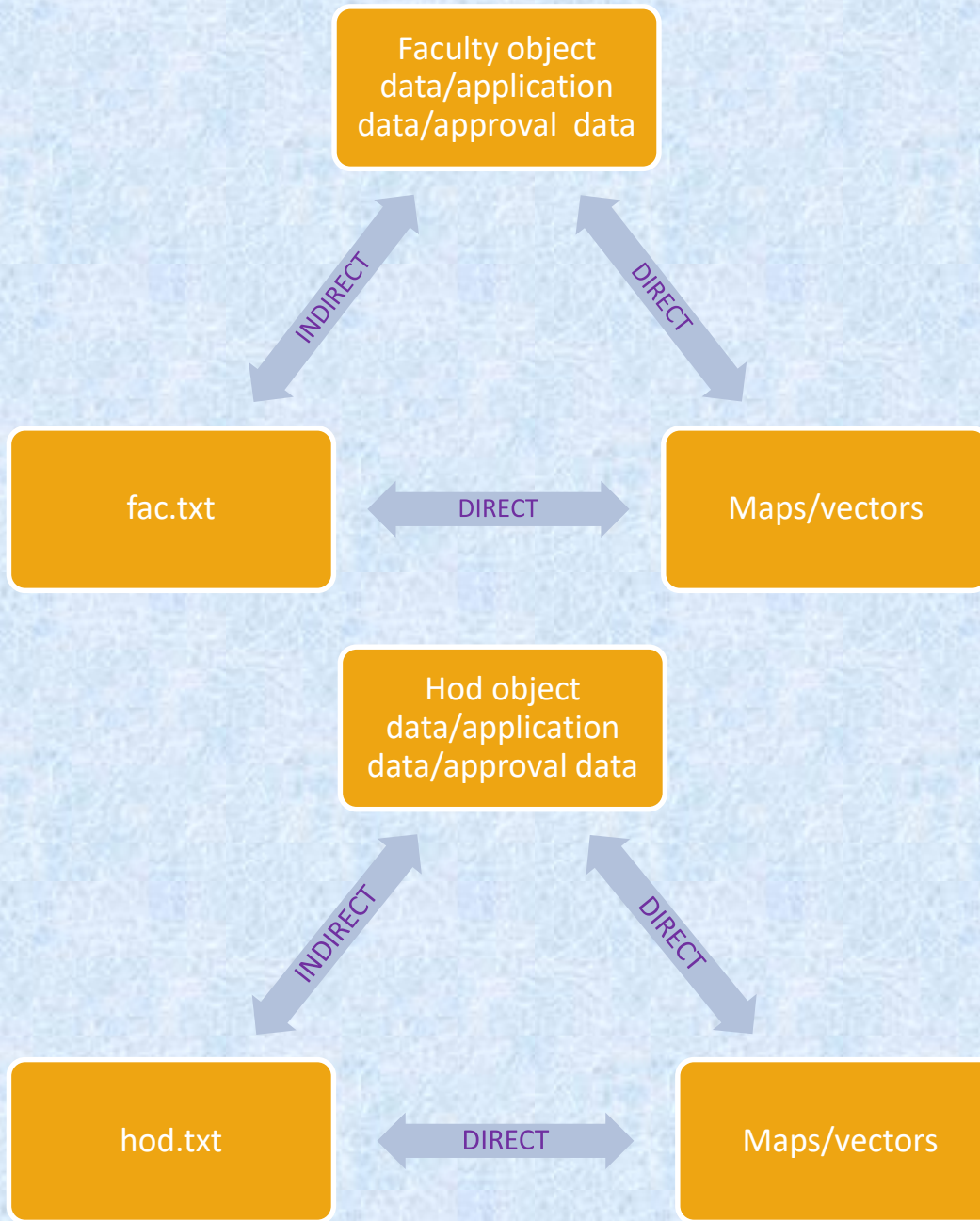
Maintains data accuracy. Each data field handled separately.

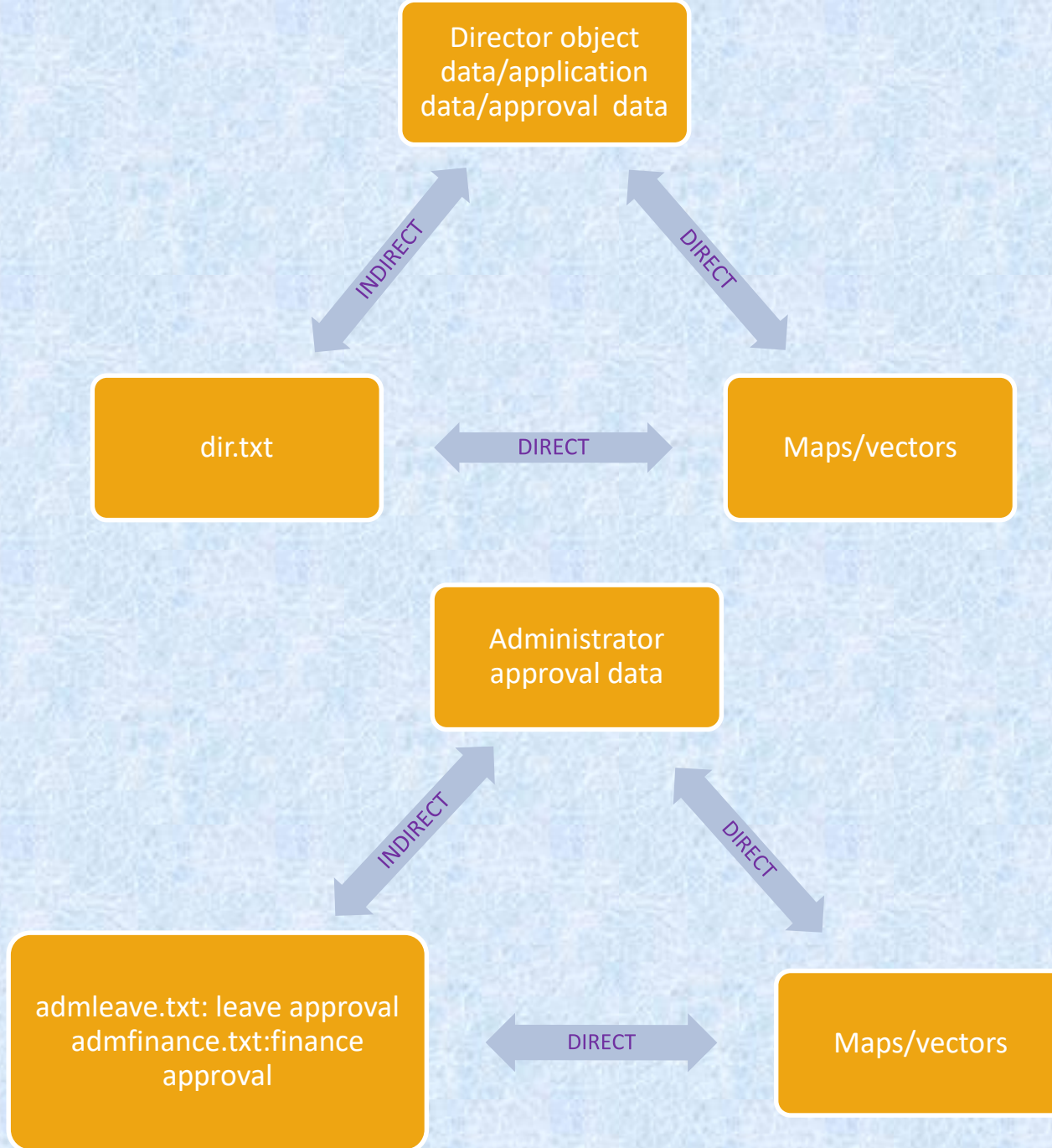
Dis-advantages

In case of abrupt termination the progress is lost

Less structured than database system







Things that could not be implemented



Strings with whitespace:
File handling issue

Rejection of application:
Particularly trivial and
less related

Database Management:
An SRS scope objective



TEST PLAN AND TESTING ANALYSIS



Unit testing statistics

SERIAL NO.	USE CASE TESTED	NO. OF TESTS PERFORMED	NO. OF TESTS PASSED	NO.OF TESTS FAILED
1.	Leave processing: UG	6	6	0
2.	Leave processing: Research scholar	6	6	0
3.	Leave processing: Faculty	8	8	0
4.	Leave processing: Hod	8	8	0
5.	Leave processing_director	10	10	0
6.	Finance processing: UG	12	12	0
7.	Apply_finance:research scholar	12	12	0

Unit testing statistics

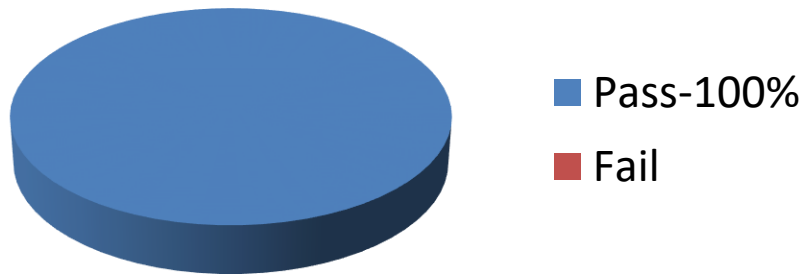
SERIAL NO.	USE CASE TESTED	NO. OF TESTS PERFORMED	NO. OF TESTS PASSED	NO.OF TESTS FAILED
8.	Approve leave: Faculty	6	6	0
9.	Approve leave: Hod	6	6	0
10.	Approve leave: Director	12	12	0
11.	Approve leave: Admin	12	12	0
12.	Approve finance: Faculty	6	6	0
13.	Approve finance: Admin	6	6	0
14.	Check_leave status	19	19	0
15.	Check_finance status	7	7	0
16.	Register	11	11	0
17.	Login	15	15	0

System testing statistics

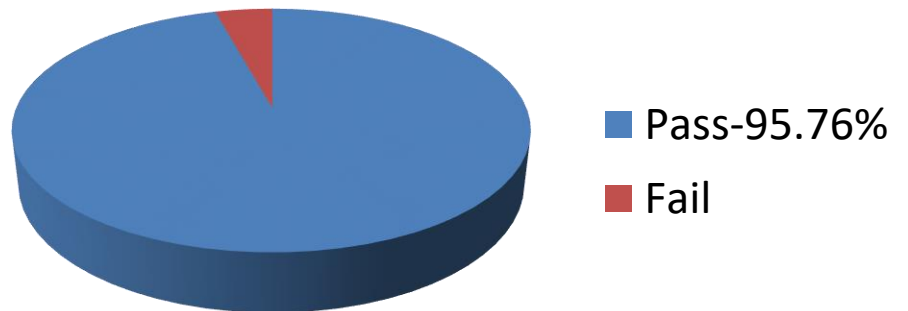
SERIAL NO.	USE CASE TESTED	NO. OF TESTS PERFORMED	NO. OF TESTS PASSED	Type
1.	Leave processing:UG to admin	2	2	End-to-end
2.	Leave processing: Research scholar to admin	3	3	Pairwise,End-to-end
3.	Leave processing: Faculty to admin	4	4	Pairwise,End-to-end
4.	Leave processing:Hod to admin	3	3	Pairwise,End-to-end
5.	Leave processing_director to admin	2	2	Pairwise
6.	Finance processing:UG to admin	2	2	Pairwise
7.	Appy_finance:research scholar to admin	3	3	Pairwise,End-to-end

Overall statistics

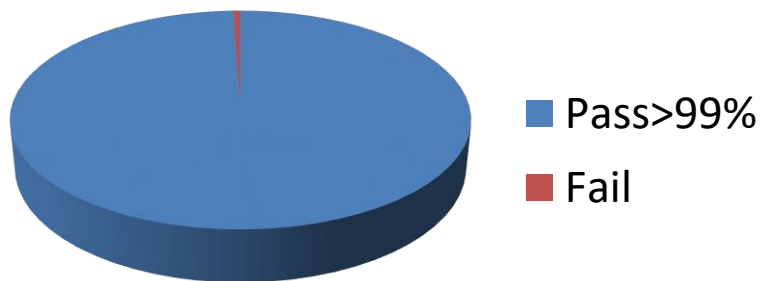
Accuracy-Before cross testing



Accuracy-after cross testing



Accuracy-after enhancement



Testing Notes

- Unit testing : CFG used: Branch Coverage Method – 182 test case
- System testing: End-to-end/Pairwise technique – 19 test case
- Cross-Project testing: 8 valid errors found(12 Invalid)
- Enhancement: 7 out of 8 errors rectified

Cross-Testing Analysis

Hostel Room Allocation *- Group 17*

List of Use cases tested

- Main
- Main handler
- Login
- Get room details
- Get empty rooms
- Put request
- View my request
- Get student details
- Get empty rooms
- View requests
- Accept requests

- Is room empty
- Get room object
- Change room status
- Database functions

- System testing
- Database/File Correctness

Unfeasible use
case: Test not
done

Verification

Feasible use
case: Tests Done

Cross testing statistics

Unit test

- Pass:38(Pre-tested, Feasible)
- Fail: 11(Cross-test, Feasible)

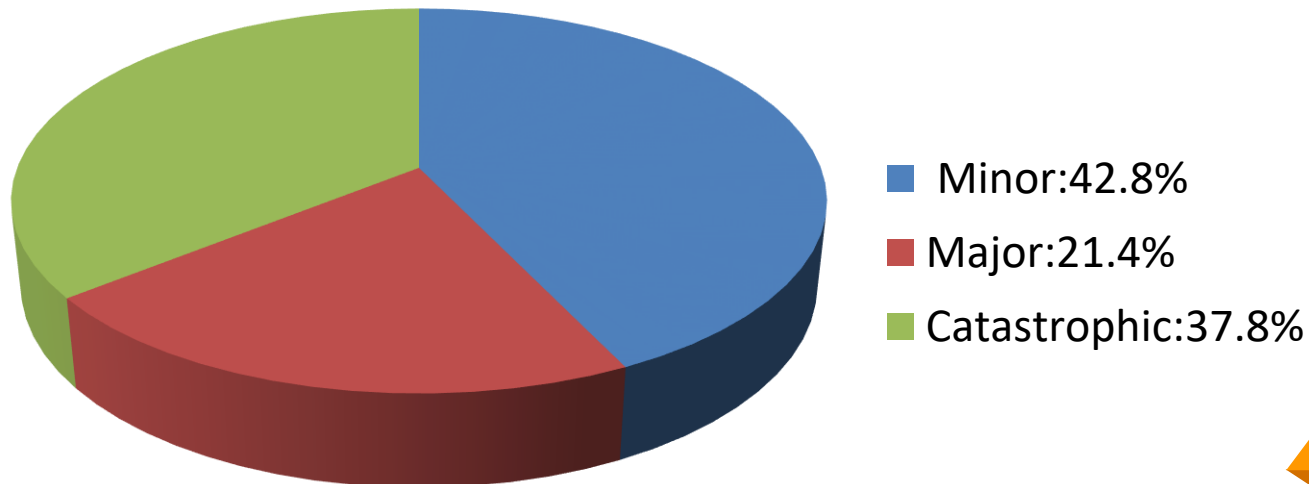
System test

- Pass:10(Pairwise)
- Fail:3(Pairwise)

Verification

- Database :Pass

Fail Test cases



Suggestions: Dev team

- Provide a scope for adding new students in the hostel.
- Rectify the failed test cases. Alternatively remove them from the document.
- For the intended results, avoid writing the pass/ fail criteria.
- For the features to be tested, avoid writing function description.
- User should not be allowed to put in multiple requests for the same room.
- 3.16.1.2 – Room 380 doesn't exist.

Major error :

If a student (say B16CS003) puts in a request for any room, the database is appropriately modified. But after 1 cycle of exiting and logging in again, the database is corrupted by modifying the request of B16CS003 to correspond to B16CS001

Conclusions

- All the requirements as mentioned in the SRS are fulfilled.
- Unit and System Testing have been carried out extensively.
- Valid changes from cross testing report were implemented in enhancement phase.

Thank
you

